

1. The above information was obtained from the records of the Federal Bureau of Investigation, Department of Justice, and is being furnished to you for your information.

[illegible]

8100, 6

SDA, 1.; Melnik, T.

SDA, 1.; Melnik, T. Regulation of operating costs. p. 72. A turn in the
siderurgical production in Soviet Russia; continuous casting of steel. p. 77.

Vol. 1, No. 12, Dec. 1956

ADMINISTRATIVE ECONOMICS IN RUSSIA.

THE POLY

RUSSIA

To: East European Review, Vol. 6, No. 5, May 1957

SARACI, M.; POPOTARU, Margot; ROTARU, Natalia; NEGRU, T.; SICA, Mihaela;
VLADUTIU, A.

Biochemical changes in the central nervous system of animals with
experimental allergic encephalomyelitis. Fiziol. norm. pat. 11
no.3:243-250 My-Je '65.

1. Catedra de fiziopatologie, Institutul medico-farmaceutic, Bucuresti.

SICH, A. [Sych, A.]; TELEDIDO, A.; TESLYA, F.; CHEGORYAN, O. [Chehorian, O.];
POVOLOTSKIY, A.I. [Povolots'kiy, A.I.], red.; LYAMKIN, V., tekhn.
red.

[New developments on the map of the Ukraine; album of diagram-
matic maps of economic administrative regions] Nove na karti
Ukrainy; al'bom kartoskhem ekonomichnykh administratyvnykh raioniv.
n.p. Derzhpolitvydav URSR, 1961. 14 maps. (MIRA 15:7)
(Ukraine--Maps)

MAR'YANOV, B.M.; SICH, A.S.[Sych, A.S.]; YAMPOL'SKIY, B.B.[Iampol's'kyi, B.B.]; VELICHKA, I.O.[Velychka, I.O.], red.; POVOLOTSKIY, A.I. [Povolots'kyi, A.I.], red.; GAVRILETS', D.V.[Havrylets', D.V.], tekhn. red.

[Great 20 years; visual aid]Pro velyke dva~~ts~~tsiatyrichchia; na-
ochnyi posibnyk. Kyiv, Derzhpolitvydav URSR, 1962. 62 p.
(MIRA 16:2)

(Russia—Economic policy)

SICH, K.D.

Structure and color of cyanine dyes (aminothiocyantins).
A. I. Kiprianov and K. D. SICH, *Zapiski Inst. Khim., Akad. Nauk. Ukr. R.S.S.R.* No. 2, 103-20 (1955). In Ukrainian, English Summary.—Cyanine dyes (I) were prepd. from benzothiazole derivs. contg. dialkylamino groups in the 6- and 8-positions and their absorption spectra were measured. The presence of the amino group increased the size of the band and shifted it to the longer wave length. With increased wt. of the alkyls, the amt. of shift of the max. increased. The alkylation of the amino group decreased its bathochromic effect. The amino group of the benzothiazole nuclei, whether in the 6- or 8-position, affected absorption in the same way, whereby I differ essentially from the thioindigo dyes. Acetamido groups in the polymethine chain did not shift the max., but decreased the intensity of the band. The influence of the amino group on the absorption of aminothiocyantins and on the reactivity of Me group in 3-methyl-6-dialkylaminobenzothiazole is interpreted on the basis of the theory of mesomerism. Elisabeth Barabash

CA

7

Influence of the chemical composition of hypoeutectoidal steels on the A_c temperature and the optimum hardening temperature. František Štěpánek. *Hutnické Listy* 3, 169-74 (1949).—The possibility of using results of dilatometric tests for detn. of the influence of the heating and cooling speeds on the transformation temps. and the detn. of the equil. transformation temps. by graphical extrapolation are briefly described. It is shown how the A_c temps. of hypoeutectoid steels and the optimum hardening temps. can be detd. quickly and with sufficient accuracy from the results of dilatometric tests. Š. has carried out a statistical investigation of the influence of C, Mn, Si, Ni, Cr, Mo, and V on the A_c temps. and compares the values obtained by calcns. based on the chem. compn. with those obtained by dilatometric methods. Hardening tests were also carried out with normalized specimens of 1/2 in. diam. and 3 in. long which have been quenched from A_c temps. determined by dilatometric methods and higher ones increased by steps of 20°. The sizes of the gamma grains of the quenched specimens were detd. metallographically and they were also calcd. by the equations of Abbott (C.A. 28, 1461'). It is recommended that the upper and lower limits of the hardening temps. for a given hypoeutectoidal steel should be within the temp. range of $A_c + 50^\circ$ and $A_c + 30^\circ$, resp., whereby the A_c temp. is detd. by calcn. or experimentally. The paper includes diagrams of the results of dilatometric tests for the Czech steels 12040 (C 0.32, Mn 0.07, Si 0.31, P 0.018, S 0.024, Cu 0.18, Ni 0.06, Cr 0.11, Mo 0.017%), steel 13290 (C 0.64, Mn 0.91, Si 1.01, P 0.024, S 0.027, Cu 0.19, Ni 0.15, Cr 0.12, Mo 0.023%), a Cr-Mo boiler steel (C 0.13, Mn 0.61, Si 0.17, P 0.019, S 0.019, Cu 0.27, Cr 0.60, Mo 0.42%) and also a transformation diagram of this Cr-Mo steel for the case of continuous cooling. Diagrams are also included on the influence of the C, Mn, Si, Ni, Cr, Mo, and V contents on the A_c temp., the calcd. and experimentally obtained gamma grain sizes for various quenching temps. above A_c and the differences between the A_c temps. obtained dilatometrically and those obtained from the chem. compn. and the Abbott formula. ... Eugene Gros.

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7

Suitability testing of low-carbon steels for fuse-welding.
 František Pobořil and František Štěpánek (Ostrava, Czech.).
Hutnické Listy 5, 5-9, 57-61, 101-4 (English summary,
 105) (1950). -- After a brief review on testing the weldability
 of steel, P. and S. describe a new test, mainly suitable for
 use with C and low-alloy steels classified as not suitable for
 hardening. Particular attention is paid to the phenomena
 occurring in the transition section of the welded
 specimen. For the tests carried out information is given
 on the compn., dimensions, hardness, and heat treatment
 of the specimens, and on the locations on the sheet from
 which the specimens were taken. The results obtained
 show that, in the case of low carbon steels with a tendency
 to brittleness, rapid cooling starting at a temp. near the
 A_c point is responsible for the brittleness of the transition
 zone near the weld. Another method, worked out from
 expts. on the "critical" temp. directly below the A_c point
 and the influence of aging, consists of quenching the rough,
 machined impact test specimen in water at a temp.
 directly below the A_c point, artificial aging of the finished,
 machined specimen at 100° for 2 hrs., and detn. of the im-
 pact resistance at room temp. The steel is classified as
 weldable if the impact resistance of all 3 specimens is equal
 or larger than 3 kg. sq. cm. The test results are com-
 piled in 19 tables and plotted on graphs. The results of
 regenerative heat treatment of artificially aged specimens
 is shown on microphotographs.

Eugene Gros

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21

Nephelometric Determination of the Oxygen Content of Liquid Steel. M. Sicha. (Hutnické Listy, 1950, vol. 5, June, pp. 234-239). [In Czech]. The nephelometric method of determining oxygen in liquid steel has been applied to 55 samples from open-hearth and electric furnaces to determine whether it is suitable as a rapid method. Using samples of 2.5 and 4 g. their oxygen content was between 0.002 and 0.076%. Determinations were carried out with a Spekker photometer. The method was found suitable for the rapid analysis of casting-pit samples, the time required being 12-15 min. Detailed instructions on procedure are included. A modified Herty method of sampling liquid steel is also discussed. —S. G.

ASM 5.4 METALLURGICAL LITERATURE CLASSIFICATION

Proprietary & Secret

5

Hardenability and Heat-Treatment Capacity of High Quality Constructional Steels. F. Sicha. (*Hutnicki Listy*, 1951, 6, 2, 38-69). [In Czech]. The author, using nearly 800 Jominy test specimens, investigated the influence of deoxidation practice and of composition on the results of heat-treating basic open-hearth and electric-furnace steels. With suitable deoxidation, austenitic grain sizes of 8 to 10 (A.S.T.M. scale) can be obtained with Czech heat-treated steels. The influence of carbon, manganese, silicon, chromium, nickel, molybdenum, and vanadium was studied; in the case of carbon, vanadium, and chromium, the author's results differed from those of Grossmann. Graphs are presented for converting the 'ideal' into the 'real' diameter for hardening in any quenching medium the cooling intensity of which is known.— E. G.

Study of natural aging and application of tests for determining the weldability of steel. F. Pohoril and F. Bucha (*Metall. Ind. USSR*, 1961, 6, 186-188; *J. Iron Steel Inst.*, 1961, 200, 308).—The effects of prolonged natural aging and artificial aging were compared. After natural aging for 2–10,000 hr., impact tests and measurements of macro- and micro-hardness were made. Steel with a pronounced tendency to brittleness developed full brittleness in 24 hr. after critical heat-treatment (quenching in water from 710°) and remained for 10,000 hr. without any sign of improvement. With killed steel, full brittleness occurred in 300 hr. after critical heat-treatment and there was no improvement after 10,000 hr. To determine whether increase in impact strength values between 5000 and 10,000 hr. indicates an improvement in forging properties, specimens were given 15,000- and 20,000-hr. aging tests. These showed the existence of pptn.-hardening for low-C steels quenched in water from temp. directly below the A_{c1} point. Simultaneous tests of natural aging following cold deformation showed that there is a difference between this type of aging, which results in only a slight increase of hardness, and aging after quenching in cold water from a temp. directly below the A_{c1} point. Statistical data from weldability tests obtained during current quality control on 123 low-C steel melts showed that aging after critical heat-treatment and aging after cold deformation give quite different results for a large no. of the steels. The assumption that a steel has an equal tendency to embrittlement as a result of thermal cycles during welding and as a result of cold deformation is not always correct. In most cases the steels unsuitable for welding were not killed.

R. B. CLARKE.

SIML, F.

Journal of the Iron and Steel Inst.
June 1954
Properties and Tests

① 3
~~Heat Treatment - An Important Factor in Relation to the~~
~~Quality of High and Low-Alloy Structural Steels. F. G. G. G.~~
~~(Hutnicki Listy, 1953, 3, (10), 891-897). (In Czech.)~~
possibility of improving the mechanical properties of basic-
Bessemer, Talbot, and Lurgi steels is discussed. The relation
between nitrogen content and the contents of other elements
in converter steels, the influence of the cooling rate from the
normalising temperature in rimming converter steels, before
and after ageing, on their hardness, tensile strength, impact
strength, hardenability, and other properties are considered.

SICHA, F.

"New steel for welded structures." p. 449.

STROJIPENSTVI. (MINISTERSTVO TEZKEHO STROJIPENSTVI, MINISTERSTVO PRESNEHO
STROJIPENSTVI A MINISTERSTVO AUTOMOBILOVEHO PRUMYSLU A ZEMEDLSKYCH STROJU.)
Praha, Czechoslovakia, Vol. 9, no. 6, June 1959.

Monthly List of East European Accessions (FEAI), LC, Vol. 8, No. 9, September 1959.
Uncl.

S/137/62/000/011/029/045
A006/A101

AUTHORS: Svoboda, Miroslav, Vrtěl, Jaroslav, Šícha, František

TITLE: Low-alloy weldable ferrite-perlitic steel with high toughness

PERIODICAL: Referativnyy zhurnal, Metallurgiya, no. 11, 1962, 74
abstract 11147(P), Czechoslovakian Patent no. 101219 of October 15, 1961)

TEXT: The composition is given for a steel grade with high a_k at temperatures to -100°C in delivery state which is suitable for the manufacture of large-size parts. The steel contains in % : C 0.10 - 0.25, Ni 0.3 - 1.0 Al (in the solid solution) 0.02 - 0.20 Si \leq 0.4, Mn 0.8 - 1.5. The steel may also contain carbide-forming elements, such as: Nb, Ta, Mo, V, Ti and Zr, separately or in combinations, up to 0.4%. Steel containing (in%) C 0.11 Mn 0.94 Si 0.28 Ni 0.65 Al (in the solid solution) 0.1 Nb 0.09 shows at -70°C a_k as high as 6 kgm/cm^2 . The temperature of transition to brittle state is -100°C in delivery state, and -70°C after deformation aging. ✓

[Abstracter's note: Complete translation]

M. Shapiro

Card 1/1

SICHA, Frantisek

Trends in the development of high-strength steel for welded constructions in Czechoslovakia. Zvar abor 10 no.1:100-108 '61.

1. Vitkovicke zelezarny Klementa Gottwalda, Ostrava.

L 18151-66 EWA(d)/EWP(t)/EWP(k) JD/IW

ACC NR: AP6010380

SOURCE CODE: 01/0034/65/000/005/0337/0344

AUTHOR: Poboril, Frantisek (Engineer; Doctor); Sicha, Frantisek ³⁴_B

ORG: Research Institute for Iron Metallurgy, Prague (Vyzkumny ustav hutnictvi zeleza);
Klement Gottwald Vitkovice Iron Works, Ostrava (Vitikovicke zelezarny Klementa Gottwalda)

TITLE: New trends in production technology of seamless austenitic steel tubes ¹⁸

SOURCE: Hutnicke listy, no. 5, 1965, 337-344 ¹⁸

TOPIC TAGS: steel, austenitic steel, metal tube, metal machining, metal pressing, ferrite

ABSTRACT: For high pressure modern steam plants economical grades of steel containing a Fe Mn Cr base were developed. A process for production of starting billets for such tubes is described. Ingots weighing 3850 kg are teemed; they are passed through blooming and billet mill without being reheated. 130 mm ϕ cylindrical billets are reduced by machining to 120 mm and cut into 390 mm long slugs. These are heated to 1150-1200°C and pressed in two hydraulic presses into hollow pressings to make seamless tubes. This method in comparison with the old one omits forging and boring of billets; this substantially increases the labor productivity. Two groups of different steel heats were analyzed. Austenitic steel billets should have a good hot workability and a ferrite delta content less than 3%. Orig. art. has: 7 figures, 11 tables, and 2 formulas. [JPRS]

SUB CODE: 13 / SUBM DATE: none / ORIG REF: 007 / OTH REF: 001

Card 1/1 vmb

ACC NR: A.0010340

DATE: 07/002/65/01 / 02/01/1965

AUTHOR: Vrtel, J. (Engineer; Candidate of sciences); Svoboda, M. (Engineer);
Sicha, F.

ORG: [Vrtel; Svoboda] State Research Institute of Material and Technology, Prague
(Statni vyzkumny ustav materialu a technologie); [Sicha] Klement Gottwald Iron Works
in Vitkovice, Ostrava (Viktovicke zelezarny Klementa Gottwalda)

TITLE: Fine-grained, niobium-alloyed weldable steel

SOURCE: Strojirenstvi, v. 15, no. 7, 1965, 512-520

TOPIC TAGS: steel, niobium steel, solid mechanical property, metal property, welda-
bility, niobium alloy, niobium, 13,032 niobium steel

ABSTRACT: The article reports detailed information on a new fine-grained niobium
alloyed steel recently developed in Czechoslovakia and standardized as No. 13,032. The
article briefly explains the effect of niobium on the mechanical properties of
steel and compares the new steel with existing standard types employed for similar
purposes. This paper was presented by J. Raiman, Engineer. Orig. art. has:
13 figures and 11 tables. [JPRS]

SUB CODE: 11, 13 / SUBM DATE: none / ORIG REF: 009 / OTH REF: 003

Card 1/1 51125

UDC: 669.14.018.29;669.14.018.62;669.293

SICHA, Ladislav

International symposium on stainless steel and alloys. Hut listy 16
no.12:898-900 D '61.

(Steel, Stainless)

MITURA, K., inz.; SICHA, M., CSc.

Supersonic determination of the reasons of plate defects and their removal. Hut listy 19 no.9:659-663 S '64.

L 21109-66 EWT(1)/ETC(f)/EPF(n)-2/ENG(m) IJF(c) AT

ACC NR: AP5015926

SOURCE CODE: CZ/0055/65/015/006/0399/0406

AUTHOR: Pilar, J.; Sicha, M.

ORG: Faculty of Mathematics and Physics, Charles University, Prague

TITLE: Verification of the microwave method of measuring small changes in con-
centration of electrons in striated plasma gm

SOURCE: Chekhoslovatskiy fizicheskiy zhurnal, v. 15, no. 6, 1965, 399-406

TOPIC TAGS: plasma resonance, electron distribution, microwave plasma, frequency band, plasma wave, traveling wave interaction, critical wavelength

ABSTRACT: A more detailed experimental verification of shorter wavelengths in a frequency band of 3 kMc was carried out. The method of measuring small changes in electron concentration in plasma by the high-frequency resonance method with an apparatus working in a frequency band of 3 kMc was verified. The authors stated that the initial relations of the given method are valid with sufficient accuracy even in this frequency band. The authors thank V. Vesely, Department of Electronics and Vacuum Physics of the Mathematical Physical Faculty of Charles University, for his valuable advice and aid in carrying out experiments. Orig. art. has: 3 figures, 6 formulas, and 2 tables. [Based on authors' abstract.] [NT]

SUB CODE: 20/ SUBM DATE: 11Nov64/ ORIG REF: 001/ OTH REF: 005/

Card 1/1 *tda*

CZECHOSLOVAKIA/Electronics - Gas Discharge and Gasdischarge Apparatus
H-7

Abs Jour : Ref Zhur - Fizika, No 2, 1959, No 3785

Author : Sicha Milos, Vesely Vitezslav

Inst : -

Title : Measurement of the Electron Density of a Discharge Plasma
in a Toroidal Resonator.

Orig Pub : Chekosl. fiz. zh., 1958, 8, No 2, 256-257

Abstract : See Referat Zhur Fizika, No 12, 1958, No 28027

Card : 1/1

CZECHOSLOVAKIA/Optics - Luminescence.

K

Abs Jour : Ref Zhur Fizika, No 2, 1960, 4507

Author : Sicha, Milos

Inst : -

Title : Electronic Method of Measuring the Attenuation Time
of Cathode Luminescence

Orig Pub : Ceskosl. casop. fys., 1958, 8, No 3, 384-386

Abstract : An electronic method is described for measuring the time of attenuation of cathode luminescence in the interval from 200 milliseconds up to five seconds. This method can be extended for other regions of attenuation times. The method is distinguished for the ease of reproducibility of the measurements, so that the results can be refined.

Card 1/1

Distr: 4E3d

✓ Electronic method of measuring the decay time of cathodo-
luminescence in the range of 200 milliseconds to 5 seconds.
Miloš Šichá (Karlova Univ., Prague). *Czechoslov. J. Phys.*
8, 100 (1958) (in Russian). — The method applies a square-
wave voltage to the grid of the electron gun of a demountable
cathode ray tube; the phosphor is placed on the screen of
the tube. The square-wave pulses are sym. and have a
duration of 200 msec. to 5 sec. The pulses modulate the
electron beam which excites the phosphor. The amplified
voltage from a photocell, on which light emitted by the
phosphor is incident, is led to a relay circuit. This circuit
produces a starting pulse at the moment when the phos-
phor ceases to be excited. A stopping pulse is produced
when the intensity of the light emitted by the phosphor de-
creases to 10% of its original value. Both pulses are re-
corded on a tape which moves at a known rate, so that the
decay time is measured by the pulse interval. The estd.
accuracy of the results is 15%. A. Krenbeller

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Distr.: 4E3d

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77/111
111
Influence of high-frequency field on striations in permanent glow discharge in neon. Miloš Šticha (Karlova Univ. Prague). *Czechoslov. J. Phys.* 8, 400 (1963) (in Russian).
The influence of a high-frequency field on striations in the glow discharge of 2 Ne tubes is studied. The high-frequency field is superimposed on various regions of the pos. column. The striations in the glow discharge are influenced by the alternating field, and this interaction appears to be a useful tool in studying such striations. The observed resonance wave length is 40 cm. A. Krembeller

CZECHOSLOVAKIA/Electronics - Electron Discharge of Gas and Gas H-7
Discharge Apparatus

Abs Jour : Ref Zhur - Fizika, No 5, 1959, No 11111

Author : Sicha Milos

Inst : -

Title : Effect of the High Frequency Field on the Striations in a dc
Glow Discharge in Neon

Orig Pub : Ceskosl. casop. fys., 1958, 8, No 4, 502

Abstract : No abstract

Card : 1/1

CZECHOSLOVAKIA / Analytical Chemistry. Analysis of In- E
organic Substances.

Abs Jour: Ref Zhur-Khimiya, 1958, No 20, 67319.

Author : Sicha M.

Inst : Not given.

Title : Determination of FeO, MnO, and Dissolved Gases in
Iron.

Orig Pub: Hutnicke listy, 1958, 13, No 2, 185-192.

Abstract: A possibility of formation of free FeO and MnO in
the electrolysis of steel has been investigated.
It was established that in the range of conditions
studied, such a formation of FeO and MnO is not
possible. It was also established that in the

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AUTHOR: Miloš Šícha

CZECH/37-59-1-23/26

TITLE: Letter to the Editors: The Influence of a High Frequency
Field on the Homogeneous Positive Column of a d.c. Glow
Discharge¹

PERIODICAL: Československý Časopis Pro Fysiku, 1959, Nr 1, p 114

ABSTRACT: The experimental arrangement has been described in Ref 1.
Striations appeared in the homogeneous positive column
when a high frequency field was applied. The striations
spread like a stationary damped wave towards the anode.
The mechanism of this phenomenon is probably similar to
that discussed in Refs 3 and 4.
There are 4 references, of which 3 are Czech and 1 is
Soviet.

ASSOCIATION: Katedra vysoké frekvence a vakuové techniky, ✓
Karlovy university, Praha
Card 1/1 (Chair of High Frequency and Vacuum Engineering,
Charles University, Prague)

SUBMITTED: August 16, 1958

AUTHOR: Miloš Šícha CZECH/37-59-2-14/20
TITLE: Letter to the Editor: The Influence of an Amplitude
Modulated High Frequency Field on the Homogeneous
Positive Column of a dc Discharge
PERIODICAL: Československý Časopis Pro Fysiku, 1959, Nr 2,
pp 213-213 (+ 1 plate)
ABSTRACT: The experimental arrangement was similar to that in
Refs 1 and 2, but the high frequency oscillator was
modulated with a square wave, such that in one modulating
half-period, the generator oscillated and in the other it
did not. The dc discharge was fed through a penthode
(Ref 5) which served as a working resistance. The
discharge tube was 2 cm in diameter and was filled with
neon at 2.1 mm Hg. The high frequency discharge was
superimposed over part of the positive column of the dc
glow discharge in a part of the discharge tube contained
in a toroidal resonator with resonance wavelength
approximately 40 cm. The influence of the modulated
high frequency discharge on the positive column was
followed by observing the changes in light intensity
emitted from the discharge. The light was measured by
a photocell whose output was amplified and fed into an ✓

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CZECH/37-59-2-14/20

Letter to the Editor: The Influence of an Amplitude Modulated High Frequency Field on the Homogeneous Positive Column of a dc Discharge

oscilloscope. Oscillograms for various distances of the photocell from the point of superposition of the discharges are shown in Fig 1 (p 222f). The positive column in the absence of the high frequency discharge was homogeneous. The modulating frequency of the high frequency field was 50 c/s. As shown in Ref 2, the high frequency discharge causes stationary striations in the positive column of the dc discharge which are damped towards the anode. With a pulsated high frequency discharge, the striations develop when the discharge starts and disappear when it stops (Fig 1). There are two regions in the stationary layer (Refs 3, 4). In one region, the intensity of the plasma forming processes is increased while in the other it is decreased. Between them is a region in which the light intensity emitted from the striated column is the same as that emitted from the homogeneous column. As shown in Figs 1b and 1d, no oscillations of light intensity exist in this region. With a pulsated high frequency discharge, the light

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CZECH/37-59-2-14/20

Letter to the Editor: The Influence of an Amplitude Modulated
High Frequency Field on the Homogeneous Positive Column of a dc
Discharge

intensity forms a stationary wave between the location
of the superposition of the discharges and the anode.
The wave is damped towards the anode. The oscillograms
in Fig 1 show that a stationary disturbance leads to
stationary striations, while a non-stationary disturbance
leads to non-stationary striations - a striation wave.
This is in agreement with the hypothesis expressed in
Refs 3 and 4.
There is 1 figure and 5 references, of which 4 are
Czech and 1 Soviet.

ASSOCIATION: Katedra vysoké frekvence a vakuové techniky
Card 3/3 Karlovy university, Praha (Chair of High Frequency
and Vacuum Techniques, Charles University, Prague)

SUBMITTED: September 24, 1958

✓

CZECHOSLOVAKIA/Electronics - Electric Discharges in Gases and
Gas Discharge Apparatus.

H

Abs Jour : Ref Zhur Fizika, No 2, 1960, 3983

Author : Sicha, Milos

Inst : Charles University, Prague, Czechoslovakia

Title : Effect of High Frequency Field on Homogeneous Positive
Column of a dc Glow Discharge

Orig Pub : Ceskosl. casop. fys., 1959, 9, No 1, 114

Abstract : An investigation was made of the influence of a high frequency field on the homogeneous positive column of a glow discharge. The discharge was excited in a tube, to the electrodes of which was applied a direct voltage. The high frequency discharge was excited in the part of the tube located in a toroidal resonator (resonant frequency $\lambda = 40$ cm). Under the influence of a high

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CZECHOSLOVAKIA/Electronics - Electrical Discharges in Gases and
Gas Discharge Apparatus.

H

Abs Jour : Ref Zhur Fizika, No 2, 1960, 3983

APPROVED FOR RELEASE: 03/14/2001 CIA-RDP86-00513R001550420008-6"

frequency discharge, the homogeneous positive column becomes stratified in the space between the place where the discharges are superimposed in the anode. The stratification was attenuated in the direction towards the anode. -- Yu.V. Kornushov

Card 2/2

art
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The influence of a high-frequency field on the homogeneous positive column of a glow discharge. Miloš Šicha (Karlova Univ., Prague). *Czechoslov. J. Phys.* 9, 124-6 (1959) (in Russian).—S. employs the app. previously described (C.A. 53, 6772d) with a resonance wave length of λ 40 cm. The superposition of striations in the pos. column due to high-frequency fields is observed with currents near 1 ma. in Ne. The observations agree with the theory of Klyartfeld (*Zhur. Exptl. i Teoret. Fis.* 22, 66(1950)) and Pekárek and Strand (C.A. 53, 14896d). A. Krembeller

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CZECHOSLOVAKIA/Electronics - Electrical Discharges in Gases and H
Gas Discharge Apparatus.

Abs Jour : Ref Zhur Fizika, No 2, 1960, 3981

Author : Sicha, Milos

Inst : Charles University, Prague, Czechoslovakia

Title : Effect of Amplitude-Modulated High Frequency Field on a
Homogeneous Positive Column of a dc Discharge

Orig Pub : Ceskosl. casop. fys., 1959, 9, No 2, 213-214

Abstract : The author has investigated the influence of an amplitude-
modulated strong high-frequency field on the stratifica-
tion of the positive column of a dc glow discharge. The
discharge was excited in a discharge tube to the elec-
trodes of which was applied a direct voltage. The high
frequency discharge was excited by a high-frequency
field of a toroidal resonator (resonant wavelength $\lambda =$

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CZECHOSLOVAKIA/Electronics - Electric Discharges in Gases and
Gas Discharge Apparatus.

H

Abs Jour : Ref Zhur Fizika, No 2, 1960, 3981

40 cm), in which was placed a discharge tube 2 cm in diameter, filled with neon at 2.1 mm mercury (the modulation frequency was 50 cycles). A photocell was used to measure the intensity of the light discharge at various points of the tube. An analysis of the results of the experiment has shown that along with the stationary stratification, stratification waves are produced upon ignition and extinction of the high frequency discharge. This confirms the idea that the moving and stationary layers are due to processes of the same character -- Yu. V. Korshunov

Card 2/2

3 1E3d
 The influence of an amplitude-modulated high-frequency field on the homogeneous positive column of a discharge. Miloš Šicha (Karlova Univ., Prague). *Czechoslov. J. Phys.* 5, 259-60 (1959) (in Russian).—In continuation of his previous studies (cf. S. and Veselý, *ibid.* 3, 256 (1958); C.A. 53, 15775c), the author investigates the influence of a strong high-frequency field on the stratification of the stationary pos. column of a discharge. The present exptl. arrangement differs in that the field modulation by the high-voltage oscillator is changed. A. Kremheller—

SICHA, M.

✓ The influence of a strong high-frequency field on the stratification of the positive column of a d.-c. glow discharge. M. Šicha (Karlova Univ., Prague). *Czechoslov. J. Phys.* 9, 495-504 (1959) (in Russian).—An exptl. study is made of the damping of moving striations in a d.-c. glow discharge by a strong high-frequency field. The measurements are in agreement with existing concepts of the production and the propagation mechanism of moving striations. The standing stratification of the pos. column of a d.-c. discharge as a result of a superimposed high-frequency discharge is also described. A. Kremheller

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83382

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Z/037/60/000/005/015/056

E192/E382

AUTHOR: Šícha, M.

TITLE: Measurement of the Concentration of Electrons and Their
Collision Frequency by Means of a Toroidal Resonator

PERIODICAL: Československý časopis pro fysiku, 1960,
No. 5, p. 408

TEXT: A method of measuring the concentration and collision
frequency of the electrons in the positive column of a DC glow
discharge by means of a toroidal resonator is described. The
method was used to measure the parameters of discharge plasma and
the results were compared with those obtained by the standard
microwave resonance method and the probe method.

ASSOCIATION: Katedra elektroniky a vakuové fyziky Karlovy
university, Praha (Chair of Electronics and
Vacuum Physics of Charles University, Prague)

Card 1/1

SICHA, M.; VESELY, V.; STUDNICKA, J.; PROSTEJOVSKY, J.; NOVAK, M.

Examination of the stationary and moving stratification in the neon discharge by means of local high-frequency field. Chekhosl fiz zhurnal 12 no.12:919-929 '62.

1. Lehrstuhl fur Elektronik und Vakuumphysik, Karlsuniversitat, Prag (for all except Novak). 2. Physikalisches Institut, Tschechoslowakische Akademie der Wissenschaften, Prag (for Novak).

STUDNICKA, J.; SICHA, M.; VESELY, V.; PROSTEJOVSKY, J.

The effect of stationary stratification on moving striations in
a glow discharge in Ne. Chekhosl fiz zhurnal 13 no.1:31-35 '63.
(MIRA 16:2)

1. Katedra elektřoniky a vakuove fyziky, Karlova universita,
Praha.

SICHA, M.

Measurement of the course of electron concentration in moving striations in neon. Chekhosl fiz zhurnal 13 no.7:499-508 '63.

1. Katedra elektroniky a vakuove fyziky, Karlova universita, Praha.

SICHA, M.; VESELY, V.

A study of the propagation of moving striations in inert gases by means of artificial feedback. Chekhosl fiz zhurnal 13 no.9: 662-669 '63.

1. Katedra elektroniky a vakuove fyziky, Karlova universita, Praha.

ACCESSION NR: AP4033425

Z/0055/64/014/004/0247/0255

AUTHOR: Sicha, M.; Vesely, V.; Novak, J.; Pekarek, L.

TITLE: Determination of the relaxation time of the electron temperature in the positive column of the electric discharge

SOURCE: Chekhoslovatskiy fizicheskiy zhurnal, v. 14, no. 4, 1964, 247-255

TOPIC TAGS: relaxation time, electron temperature, electric discharge, electron density, positive column

ABSTRACT: A method of measuring the relaxation time of the temperature of electrons in the positive column of an electric discharge is described. The method uses measurements of the phase shift between the course of the electron temperature and that of the concentration of electrons in artificially excited moving striations of small amplitude. These data and the values measured for the electric field and temperature of the electrons in a homogeneous column are used to calculate the relaxation time of the electron temperature on the assumption that the diffusion of the electron temperature has no substantial influence on the time. The authors conclude that their results indicate that theoretical

Card 1/2

ACCESSION NR: AP4033425

mastery of the layer phenomena in the positive column plasma has already opened new possibilities in plasma diagnostics. Orig. art. has: 10 formulas and 3 tables.

ASSOCIATION: Lehrstuhl fur Elektronik und Vakuumphysik der Karlsuniversitaet, Pragu(Chair of Electronics and Vacuum Physics, Charles University); Physikalisches Institut der Tschechosl. A.d.W., Pragu(Physics Institute, Czech. Academy of Sciences)

SUBMITTED: 06Nov63

DATE ACQ: 01May64

ENCL: 00

SUB CODE: GP

NO REF SOV: 002

OTHER: 011

Card 2/2

SICHA, Miroslav, kandidat technickych ved

Supersonic detection of thick plate defects and their removal. Hut listy 19 no. 2: 108-117 F '64.

1. Vitkovicke zelezarny Klementa Gottwalda, Ostrava.

Microanalytical determination of aluminum in steel—
modified 8-hydroxyquinoline method. Mivoslav Šicha.
Hutnické Listy 3, 293-6(1948).—The pptn. of Al with
some Fe, Cu, Cr, Ti, and other elements is first made from
a H_2SO_4 soln. of 20 g. steel by titration with an 8% soln.
of $NaHCO_3$ added in slight excess. The ppt. is dissolved in
 HCl , oxidized with concd. HNO_3 , and evapd. with H_2SO_4
to fumes. After filtration from SiO_2 the final pptn. is
made as recommended by Heczko (*C.A.* 29, 1735(1935))
from a hot soln. treated with tartaric acid and NH_3 and
containing KCN in excess. In order to convert the ac-
companying metals into complex cyanides completely
 H_2S is also introduced. The pptn. of the filtered soln
with a fresh 10% alc. soln. of 8-hydroxyquinoline is
followed. It is recommended that in presence of Ti, Sn,
and U a reppn. be made from a soln. contg. NH_4OAc with
the oxine dissolved in dild. acetic acid. A. Langer

ASB 3.4 METALLURGICAL LITERATURE CLASSIFICATION

C 4.

Nephelometric determination of the oxygen content of liquid steel. Miroslav Štěpán. *Hutnické Listy* 5, 231-9 (1950) (in Czech).—The nephelometric method of detg. the O content of liquid steel has been tried on 55 specimens to det. whether this method is suitable for the rapid detn. of O. The specimens were taken from open-hearth Talbot and elec. furnaces. Their chem. compns. and the procedure for detg. O are given. For analysis, specimens of 2.5 and 4 g. were used, with O content varying from 0.002 to 0.070%. The detn. was carried out with a Spekker photometer. The method was found suitable for rapid detn. of O of preliminary specimens taken during the purification period; the duration of the analysis was 12-15 min. Detailed instructions for the application of this method are included. A modified Hertz method (cf. *C.I.A.* 24, 2399) of sampling liquid steel has also been tested and it was found that complete killing has a favorable influence on the reliability of the results of C detn. obtained for preliminary cast specimens.

B. Gros

SICHA, MIROSLAV

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Methodology of the analytical determination of gases and nonmetallic components in steel. Miroslav Šicha. *Hutnické Listy* 6, 470-84, 590-4 (1951). A special description is given for taking samples of liquid C steel for a quick detn. of O. Total O, H, and N in steel is detd. by the vacuum extrn. method at 1650° in an app. improved by Š. For detg. Si compds. in steel Dickenson's method, modified by Š., is used. For the detn. of free oxides which are dissolved in dild. acids Š. dissolves the sample of steel in neutral CuSO_4 ; the HgCl_2 method is also used. 24 references. F. J. H.

BTR

0290* Analytical Methods of Determining Gases and Non-metallic Inclusions in Steel. (In Czech.) Miroslav Sicha. *Hutnické Listy*, v. 6, Dec. 1951, p. 590-593. Analytical methods are described for determining amounts of H, N, and O, in steels. Microanalytical methods were used for nonmetallic inclusions. Vacuum extraction at 1650°C. was used for gaseous analyses. Data are tabulated. 24 ref.

SICHA, M.

✓ Study of the Problem of Hydrogen in Steel. M. Sicha.
(Hutnická Listy, 1953, 8, 1, 73-80; 2, 73-80). (in Czech).
Following a detailed survey of previous work on hydrogen in
steel, solid and liquid, methods of testing for its presence are
described, and, on the basis of the experimental work pre-
sented, a new theory on the hydrogen-slag equilibrium is deve-
loped. The influence of the nature of the charge, furnace
atmosphere, moist materials in the charge, and other factors
on the hydrogen content are considered.—P. T.

J. Iron & Steel Institute
V 175 part 2 Oct 1953
Rolling Mill Practice

of

LPH

M. SICHA

Journal of the Iron and
Steel Institute
July 1954
Production of Steel

The Study of Non-Metallic Inclusions in Steel. M. Sicha.
(*Hutnické Listy*, 1953, 8, (10), 560-572; (11), 567-577). [In
Czech]. A detailed study is made of inclusions, their effects
and origin. First the nature of inclusions, their relation to
the mechanical properties of the steel, and their extraction and
analysis by chemical and X-ray methods are discussed. The
equipment required for analysis is described, and the results
are considered with reference to the diagrams showing the
refractive indices, colours, hardness, and phases of the MnO -
 SiO_2 - Al_2O_3 and other systems. Inclusions are classified into
three groups: (1) Products of the deoxidation in the steel
furnace; (2) products of reactions with the refractory lining;
and (3) refractory grains removed from the lining by the erro-
sive action of the liquid steel. The influence of aluminium
additions on the quality of open-hearth and converter steels,
and of additions of liquid siliconmanganese on the deoxidation
is discussed.—P. F.

SICHA, M.

"Research on Nonmetallic Inclusions in Steel." p. 567, Brno, Vol. 8, no. 11, Nov. 1953.

SO: East European Accessions List, Vol. 3, No. 9, September 1954, Lib. of Congress

SICHA, M.

Effect of the technology of smelting and casting steel on its quality.
p. 542.
SOVETSKA VEDA: HUTNICTVI, Prague, Vol. 3, no. 5, 1954.

SO: Monthly List of East European Accessions, (EEAL), LC, Vol. 5, No. 6,
June 1956. Uncl.

SIC 11A, M.

1729. Determination of non-metallic inclusions in steel by electrolysis and chlorination. Electrolytic determination of carbides in steel. M. Štěpán (VZKT, Ostrava, Czechoslovakia). *Metall. List.*, 1956, 8 (1), 2-11. — Inclusions in steel isolated by

electrolysis can be separated from carbides by chlorination *in vacuo*. Sulfides are separated from the electrolytic residue and are determined in a special apparatus, the H_2S being collected in a Ca acetate trap and the CdS determined photometrically. The apparatus for chlorination is described and illustrated. It is capable of working at high temp. (up to $1200^\circ C$) and under high vacuum (10^{-3} mm of Hg). Details of the method and of its use are given. Electrolysis is carried out under nitrogen for 24 to 48 hr. in an apparatus (illustrated) in which the anode and cathode compartments are separated by a diaphragm. The anodic electrolyte contains Na citrate (3 per cent.), $NaCl$ (2 per cent.), KBr (1-5 per cent.) and KI (0-1 per cent.), adjusted to pH 3; for high austenitic steels, potassium thiocyanate (2 per cent.) replaces the other salts of K . The electrolyte is replaced at the rate of 1 drop per sec. to prevent evolution of oxygen at the anode. Any insoluble matter crumbling off the electrode is collected on a filter at the outlet of the anodic electrolyte. A. O. JAKUBOVIC

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Sicha
CZECH

Effect of residual elements and gases on the quality of Al products. Miroslav Sichá. Hutnické Listy 9, 398-975 (1954).—Studies were made of the effect of pouring on the amt. of O in liquid steel and the amt. of O and of nonferrous inclusions in a finished melt. Methods of decreasing the agts. are discussed. Petr Schneider

of

MR A Study of Electrolytically Isolated Carbides from Low-Alloy Boiler Plate. M. Štěpánek, A. Šmrhová, and F. Ermler. (*Hutnické Listy*, 1958; 10, (3), 148-162). [In Czech]. The separation and micro-analysis of the carbides are described. Chemical and electron-diffraction methods were used for the identification. Carbides in vanadium steels were found to stabilize sooner than in molybdenum steels of similar compositions. The mode of carbide stabilization is described on the basis of data obtained in experiments carried out in the range 500-550° C. over periods of 8000-125,000 hr.—F. F.

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SICHA, MIROSLAV

/ 62* Potentio-Coulombometric Determination of Small
Quantities of Carbon in Steels and Carbides. Potencio-coulom-
bometrické stanovení malého množství uhlíku v ocelích a
v karbidech. (Czech.) Miroslav Sicha. Hutnické listy, v. 10, CH
no. 9, Sept. 1955, p. 535-542.
Very sensitive method successfully employed in micro-laboratory
for routine analyses. Table, diagrams, graph. 5 ref.

2/24

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... of oxygen and alloys by welding with coated electrodes.
... Ministerstvo kuznetskogo stroitelstva i rudnykh zasobov
... Ministerstvo stroitelstva. Vol. 4, no. 7, July 1955.

... : ... European Accidents List, Vol. 5, no. 7, September 1956

Sicha, M.

not Hydrogen in Steel¹⁸ M. Šicha. (Hutník, 1955, 5, (10), 302-303). [In Czech]. ~~The~~ factors determining the hydrogen content are discussed and proposals made for keeping it at a minimum are reviewed with special reference to recent Soviet publications.—P. P.

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RS

Šícha, Miroslav

CZECH

✓ Research on electrolytic insulated carbides from low-
alloyed kettle-steels. Miroslav Šícha, A. Smrčková, and R.
Ernš, Hutnické Listy 10: 140-82 (1955).—Specimens of
steels destined to serve at elevated temps. were heat-treated
and then annealed at 500-550° for 1000 hrs. It was found
that carbides in V steels become stabilized sooner than car-
bides in Mo steels. Also, factors which detd. equil. dis-
tribution of alloying elements between ferrite and carbides
were given. The authors concluded that V kettle-steels
will, during long-time service at elevated temps., be equiv. to
Mo steels. Petr Schneider

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SICHA, A.

438

✓ 1019. Determination of hydrogen in steel.
M. Sicha (Vltkovické železářny, K. Gottwaldův,
Ostrava, Czechoslovakia). *Hutn. List.*, 1955, 10
(8), 479-483. A simple portable apparatus for
determining H in steel is described. Gases are
separated from steel at 400 C, measured volu-
metrically, and the content of H is calculated by
using an empirical factor, 0.82. Results obtained
with this apparatus are compared with those from
vacuum-fusion analyses and it is concluded that
the optimum time for the new method is 80 to 100
min., this period minimising the errors due to
mutual reaction between the H, water vapour and
at the extraction temp. S.C.I. Abstr.

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Sicha

SICHA, M.

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✓ 1020. Potentio-coulometric determination of carbon in steel and carbides. M. Sicha (Vltkovické železářny K. Gottwald, Ostrava, Czechoslovakia). *Hutn. List.*, 1955, 10 (9), 535-542.—The C in a steel or carbide sample is converted by combustion, in a microchemical train, into CO₂, which is absorbed in Ba(OH)₂, followed by potentio-coulometric titration with 0.02 N HCl, with a platinum cathode and calomel anode. The sensitivity attained is ± 0.004 mg, but greater accuracy is attainable with a highly sensitive galvanometer. The method is suitable for routine determinations.

S.C.I. Abstr.

Physico
Chem

SICHA,
MIRSLAV, ~~SICHA~~

✓ 4851- Effect of Gas on the Quality of Pig Iron and Cast Iron. Vliv plynů na jakost surových želez a litin. (Czech.) Vladimír Zedník and Miroslav Sicha, *Svědění*, v. 4, no. 1, *Práce Československého vysokého středního školství*, v. 3, no. 27, Jan. 1956, p. 181-196.

MC Cause of a higher content of gases in old gray cast iron is attributed to the rapid acceptance of moisture by graphite. The critical content of H in cast iron, gas enriched with water vapor, is 5 to 10 cc. of H per 100 g. of metal. The gas content in the pig iron depends only slightly from the type and composition of the blast furnace charge. Tables, micrographs, graphs, diagram. 16 ref.

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SICHA, M.

Notes

The Effect of Gases in Pig Irons and Cast Irons. V. Zednick and M. Sicha. (Sidermetol, 1950, 4, (1), Appendix). (In Czech). By determining the adsorption activity of graphite it was found that the cause of high gas contents in old cast irons is the water adsorption of the graphite and not the direct adsorption of gases from the atmosphere. Grey cast irons were artificially enriched with gas in laboratory and works melting furnaces and the cause of gas bubble formation was thus studied. The critical amount of hydrogen in grey cast irons resulting primarily from steam amounts to 8-10 per 100 grams. If the upper limit is approached or exceeded, blow holes form in the castings, while with lower concentrations castings tend to have a "white" surface. The gas content of pig irons is but little affected by the composition of the blast furnace charge. Vanadium is best removed from pig iron by blowing oxygen-enriched air into the metal in the runner. The gas content of the iron is not thereby increased if the slag is subsequently allowed to take up the oxide phases formed. High silicon contents tend to hinder the vanadium removal. The effect of gases on the metallurgical and mechanical properties of cast irons was studied. —F.F.

SICHA, M.

Gases in welding metals.

P. 358. (ZVARANIE) (Bratislava, Czechoslovakia) Vol. 6, no. 12, Dec. 1957

SO: Monthly Index of East European Accession (EEAI) LC Vol. 7, No. 5, 1958

CZECH/34-59-1-7/28

AUTHORS: Vodsedálek, Josef, Ing. and Šicho, Miloslav

TITLE: Properties of Chromium-Nickel Austenitic Steels Shaped at Low Temperatures (Vlastnosti chromnikových austenitických ocelí tvářených za nízkých teplot)

PERIODICAL: Hutnické Listy, 1959, Nr 1, pp 38-43 (Czechoslovakia)

ABSTRACT: Paper read at the Conference "Czechoslovak Metallurgical and Foundry Days 1958".

Experiments were carried out on AKVS 18/8 Ti steels from two melts of the following compositions which were deformed at -196°C : 0.08% C, 0.67% Mn, 0.71% Si, 0.013% P, 0.005% S, 18.53% Cr, 9.48% Ni, 0.60% Ti and 0.11% C, 0.55% Mn, 0.69% Si, 0.010% P, 0.009% S, 18.95% Cr, 8.77% Ni, 0.60% Ti. It was found that this material has certain properties which are valuable for highly stressed components. It has a high strength and outstanding toughness, a high fatigue limit and relatively high internal damping; its resistance to cavitation is high and it also has a high resistance to seizing and corrosion. Therefore, this steel is very suitable for springs located in aggressive media, for

Card 1/2 turbine blades of the final stages which are exposed to

CZECH/34-59-1-7/28

Properties of Chromium-Nickel Austenitic Steels Shaped at Low Temperatures

humid steam, for compressor blades and for various valves, bolts etc. intended for operation in chemical equipment. The main question is what method should be used to obtain economically the necessary degree of shaping at such low temperatures. The solution is relatively easy for drawn wires and profiles; in some cases local shaping, for instance by means of rolls, would be adequate. In the paper results are given of tests relating to the following: metallographic investigations, thermal expansion, magnetic properties, fatigue strength (in tension-compression cycles), internal damping, resistance against erosion and cavitation, resistance to seizing, intercrystallite and stress corrosion.

There are 23 figures and 2 Tables and 14 references, 4 of which are Czech, 7 English, 2 Soviet, 1 German.

ASSOCIATION: Státní výzkumný ústav materiálu a technologie, Praha
(State Research Institute for Materials and Technology, Prague) ✓

SUBMITTED: September 25, 1958
Card 2/2

CZECH/34-59-6-12/23

AUTHOR: Šícha, Miroslav

TITLE: Nephelometric Determination of the Oxygen Content in Low Alloy Steels (Nefelometrické stanovení kyslíku v nízkolegovaných ocelích)

PERIODICAL: Hutnické Listy, 1959, Nr 6, pp 513-515 (Czechoslovakia)

ABSTRACT: In earlier papers (Refs 1-2) the author described rapid methods of determining oxygen in liquid carbon steels which he designated (according to Swinden and Stevenson, Ref 3) as a nephelometric method, although turbidimetric would be a more correct expression. By means of that method the oxygen content of liquid steel can be determined in 15 min. In this paper the process of fast (20 to 25 min) turbidimetric determination of the oxygen content in alloy steels is described. The method is based on the principle of killing a specimen of liquid steel by adding 1% Al and turbidimetric measurement of the Al_2O_3 in the solution of the specimen produced in suitable acids. The disturbing effect of the alloying elements (tinting of the solution) is eliminated by centrifuging a comparison solution (for 3 min at 4000 r.p.m.) and using a compensation method ✓

Card 1/2

S/123/62/000/017/001/006
A052/A101

AUTHORS: Pluhař, Jaroslav, Šícho, Miroslav

TITLE: The properties of Cr-Mo-V type heat-resisting stainless steel at temperatures up to 600°C

PERIODICAL: Referativnyy zhurnal, Mashinostroyeniye, no. 17, 1962, 14 - 15, abstract 17A99 ("Materiál. sb. 1960. Část 2". Státní výzkumný ústav materiálu a technol. Praha, 1960, 7 - 24, Czech; summaries in Russian and English)

TEXT: The results are reported of a study of the effect of heat treatment and the amount and form of δ -ferrite separation on the impact toughness, fatigue strength, internal friction, heat resistance, structure stability and the tendency to temper brittleness of 20Cr12 Mo2V type stainless steel in the 450 - 650°C temperature range. The data obtained entitle to a conclusion that the steel of the said type, used for steam turbine blades for operation at 600°C, must contain not more than 10 - 15% δ -ferrite. Temperature regions of existence of intermetallide phases are established.

[Abstracter's note: Complete translation]

Card 1/1

S/137/62/000/006/121/163
A052/A101

AUTHORS: Vodšed'álek, Josef, Vystyd, Miloš, Tykva, Jaroslav, Váša, Čestmír,
Sicho, Miroslav

TITLE: Materials for gas turbine blades

PERIODICAL: Referativnyy zhurnal, Metallurgiya, no. 6, 1962, 56, abstract 6I330
(Materiál. sb. SVUMT. 1959". Praha, 1960, 57 - 114, Czechoslovakian;
Russian, English and German summaries)

TEXT: The high-temperature alloy of Poldi AKNTs grade was investigated in a cast and forged state. Besides long-life strength of the material, relaxation, fatigue and damping, thermal expansion, heat conductivity, E and thermal impact resistance of the material were determined. An investigation of the alloy in a forged state has shown that the values of mechanical and heat-resistance properties are in accordance with the literature data for nimonic-80A alloy. However, by means of a special heat treatment it was possible to achieve higher characteristics. The alloy is sensitive to stress concentrations on account of its low ductility at rupture. In a cast state the heat-resistance properties are good,

Card 1/2

Card 2/2

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Z/037/60/000/005/016/056
E192/E382

AUTHORS: Bakule, R., Šícha, M., Veselý, V. and Kracík, J.
TITLE: Complex Conductivity of Plasma in a DC Glow Discharge
in Neon
PERIODICAL: Ceskoslovensky casopis pro fysiku, 1960,
No. 5, p. 408

TEXT: The measurement of the concentration and collision frequency in the positive column of a DC glow discharge in neon by the high-frequency method is described. The results of the measurements show that the expression for the complex conductivity of plasma derived by Fange is applicable to the positive column of a DC glow discharge. It is also shown that the measurements can also be analysed by means of the Lorenz formula which is simpler for numerical calculations. The electron concentration evaluated from this formula is (within the range of experimental error) similar to that calculated from the Fange expression. ix

ASSOCIATIONS: Katedra elektroniky a vakuové fyziky Karlovy
university, Praha (Chair of Electronics and Vacuum Physics of
Charles University, Prague)
Fysikální ústav ČVUT, Poděbrady (Physics Institute
of ČVUT, Poděbrady.
Card 1/1

80781

Z/054/60/000/08/030/030
E073/E335

18.3200

AUTHOR: Šícha, Miroslav

TITLE: Study of Hydrogen in Steel Heats in Basic Furnaces Fired
With Gas and With Oil

PERIODICAL: Hutnické listy, 1960, Nr 8, pp 657 - 670

ABSTRACT: The Czech steel industry is changing over, to an increasing extent, to using oil as a fuel in furnaces, which is more economical (Ref 41). In this paper, the author deals with the problem of the quality of steel produced with fuel oil, particularly as regards the hydrogen content and the relative importance is determined of factors which govern the hydrogen content of steel. Since the hydrogen content of the melt depends to a certain extent on the P_{H_2O} in the furnace atmosphere, the use of fuel oil atomised with steam can have an unfavourable effect on the hydrogen content of steel and lead to more frequent occurrence of heats with flocculi. In the study described in this paper, the results are evaluated of 93 heats of carbon and alloy steels, in two steel works, produced in furnaces fired with gas and with oil in large basic Wellman and Talbot-type

Card1/4

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Z/034/60/000/08/030/030

E073/E335

Study of Hydrogen in Steel Heats in Basic Furnaces Fired with Gas and with Oil

furnaces in which the "ore" process was applied and in basic open-hearth furnaces in which the "scrap" process was applied. The heats of carbon steels were finished in the ladle, whilst the heats of alloy steels were mostly finished in the furnace under a carbon-enriched slag. The results under a great variety of conditions are obviously of interest also for other works which are changing over to oil-firing of steel furnaces. The results are described in great detail, giving data on the fuel oils and gases used and on all the factors pertaining to the individual heats studied during the experiments. The conclusions can be briefly summarised thus: in large steel furnaces with hearth-area loads exceeding 3.8 t/m^2 , the use of oil atomised by means of water vapour did not bring about an increase of the hydrogen content in the liquid steel and this is due to the fact that the hydrogen content determined prior to tapping the melt is considerably below the state of equilibrium with the $\text{P}_{\text{H}_2\text{O}}$ in the atmosphere. ✓

Card 2/4

80781

Z/034/60/000/08/030/030

E073/E335

Study of Hydrogen in Steel Heats in Basic Furnaces Fired with Gas and with Oil

In open-hearth furnaces with specific hearth-area loads of 1.7 t/m^2 , heating with oil atomised by means of ^{water}vapour brought about an increase to some extent of the hydrogen content of the steel prior to tapping since, in this case, the hydrogen content in the melt approaches, prior to tapping, the equilibrium state with the $\text{P}_{\text{H}_2\text{O}}$ content of the atmosphere. In the case of alloy steel, finished under a carburised slag, the hydrogen content of the steel prior to tapping exceeds in some cases the equilibrium content. The influence of the $\text{P}_{\text{H}_2\text{O}}$ of the furnace atmosphere on the hydrogen content of the steel is determined in the first instance by the size of the boundary area between the bath and the atmosphere and by the physical and chemical properties of the slag. The authors evaluated also the influence of numerous other factors on the hydrogen content of the liquid steel, for instance, the MgO content of slag, the temperature, the moisture content of the slag-forming

Card3/4

Z/032/62/012/004/005/007
E073/E335

18.11.61
AUTHOR: Šicho, M.

TITLE: Utilization of 12% Cr steel for some machine parts

PERIODICAL: Strojírnoství, v.12, no. 4, 1962, 317

TEXT: The report contains an analysis of the possibilities of utilizing refractory chromium steels which have very good properties and are suitable for the construction of turbines and boilers, as material for tubes (with regard to the technological requirements to be met during production and welding), bolts and drawn turbine blades. The properties of drawn blade profiles have been verified experimentally. In the first stage tubes of diameter 32/5 mm from the steel Poldi AK2MV were put into production and their welding has been mastered. In the next stage their properties will be verified. 12% Cr steels are not sufficiently resistant to relaxation and therefore other types of Cr steels will have to be used for bolts.

Research Report Z-61-1016, SVUMT, Prague, 1961.

[Abstracter's note: this is a complete translation.]

Card 1/1

43189
Z/055/62/012/008/001/001
1045/1245

262351

AUTHOR: Sicha, M.

TITLE: An application of a high frequency method of measuring the electron density in measurements of the stratified positive column of the d.c. glow discharge

PERIODICAL: Chokhoslovatkiy fizicheskiy zhurnal V. 12, no. 8, 1962, 632-644

TEXT: The parameters of a microwave resonator into which a d.c. glow discharge tube is inserted depend on the electron density in the plasma contained in the tube. The author calculates the dependence of the high frequency output voltage of the resonator on the electron density in the plasma, both for the case of constant and electron-velocity dependent collision frequency of the electrons. The relations derived show that, under certain limiting conditions, the amplitude of the high frequency output voltage is proportional to the electron density in the plasma, in the case of constant collision frequency. The proportionality is also valid in the case

Card (1/2)

Z/055/62/012/011/002/002
D234/D308

AUTHORS: Šicha, M., Veselý, V. and Studnička, J.

TITLE: Artificial excitation of fast moving layers in He
by a high frequency field

PERIODICAL: Československí fyzikální časopis, Seriya B,
v. 12, no. 11, 1962, 873-874

TEXT: Measurements of layer width were carried out in discharge tubes 2 cm in diameter and 50-70 cm long. The width depends linearly on the field frequency. The product of longitudinal electric field strength E on the positive column and the layer width in resonance was computed in order to distinguish between the three layer types (this product is constant for each type). The results show that all three types (p-, r- and s-; L. Pekárek, M. Novak, Czech. J. Phys. 9, 1959, 401) can be excited in He. There is 1 figure. ✓

ASSOCIATION: Lehrstuhl für Elektronik und Vakuumphysik der Karls-
universität, Prag (Department of Electronics and
Card 1/2

Artificial excitation ...

Z/055/62/012/011/002/002
D234/D308

Vacuum Physics, Charles University, Prague)

SUBMITTED:

May 15, 1962

Card 2/2

45590

2/055/62/012/012/004/004
D256/D308

44 6

AUTHORS:

Šicha, M., Veselý, V., Studnička, J., Prostějovský,
J. and Novák, M.

TITLE:

Investigation of stationary and traveling striated
discharge in neon with local HF excitation.

PERIODICAL:

Czechoslovak Journal of Physics, v. 12, no. 12,
1962, 919-929

TEXT:

The possibility was investigated of using the disturbance produced by a local HF field in systematic studies of stationary and traveling striation of the discharge in inert gases. In the method developed by the authors the HF field interacted upon a limited part of the positive column of a d-c discharge originating stationary and traveling strata and striation waves. Discharge tubes 50 to 80 cm long were used applying across them a voltage adjustable from 200 V to 3 kV. The discharge current was controlled and stabilized with two pentode tubes in series with the discharge tube. The luminous pattern of the discharge was observed visually and tubes

Card 1/3

Z/055/62/012/012/004/004
D256/D308

Investigation of stationary ...

could be moved along and across the discharge tube by means of photo-electronmultiplier. A toroidal resonator operating in the 40 cm wavelength-band provided the local HF excitation. A double structure was observed in the stationary strata differing both in shape and amplitude; the amplitude of one structure against the other one increased with increasing discharge current, but at the same time the stationary strata were independent of the amount of HF power absorbed by the plasma. The striation waves were found to originate in the region of the HF excitation of the positive column. The resonance frequency of the moving strata was investigated as a function of the discharge current as well as the dependence of the wavelength upon the frequency. The frequency of the traveling strata in the striation wave and the resonance frequency of the artificially produced traveling strata were found to be equal within the accuracy of the measurements. The pattern of the discharge could be controlled by changing the modulation of the HF field. It was concluded that the possibility of employing the HF disturbance in the studies of striation in d-c discharges has been established. There are 7 figures and 1 table.

Card 2/3

SICHA, Miroslav, kandidat technických ved

Determination of the origin of macroscopic inclusions in steel.
Hut listy 17 no.7:479-489 J1 '62.

1. Vitkovicke zelezarny Klementa Gottwalda, Ostrava-Vitkovice.

SICHA, Miroslav, kandidat technických ved

Determination of the origin of macroscopic inclusions in steel.
Part 2. Hut listy 17 no.8:537-543 Ag '62.

1. Vitkovické zelezarny Klementa Gottwalda, Ostrava-Vitkovice.

Z/055/63/013/001/005/013
E032/E414

AUTHORS: Studnička, J., Šicha, M., Veselý, V., Prostějovský, J.
TITLE: The effect of stationary stratification on moving striations in a glow discharge in Ne
PERIODICAL: Czechoslovak Journal of Physics, Section B, v.13, no.1, 1963, 31-35

TEXT: The effect of stationary stratification on the parameters of moving striations was investigated with the apparatus described previously (Czech. J. Phys. B 12 (1962), 919). The resonator with which the stratification was excited was supplied with high frequency power which was sufficient to maintain self-supporting high frequency discharge. The high frequency power was modulated with a sine wave derived from a low frequency oscillator. The depth of modulation was sufficient to excite moving striations and was of the order of 10%. The second resonator was placed near the anode and was supplied from a constant amplitude source which was also sufficient to maintain a self-supporting high frequency discharge. Changes in the intensity of the glow in the stationary and moving striations were measured with the aid of a photomultiplier which could be displaced along the discharge tube.
Card 1/3

The effect of stationary ...

Z/055/63/013/001/005/013
E032/E414

The form of the stationary striations was established by measuring the d.c. component of the photomultiplier output which was proportional to the constant component of the radiation emitted by the discharge. The amplitude of the moving striations was determined by measuring the alternating component across a load resistance. The velocity of the moving striations was also determined with the aid of the movable photomultiplier and an oscillograph. Measurement of the amplitude of the moving striations showed that in the region of the maximum of the constant component of the emitted intensity (stationary layers), the amplitude of the alternating component was lower than otherwise. Thus, the moving striations are attenuated at points at which the stationary striations are present. The positions of the minima and maxima in the amplitude of the moving striations are independent of the frequency of the striations but do depend on the structure of the stationary stratification. The velocity of the striations reaches a maximum in the region where the intensity of the constant component of the light flux is a minimum and vice versa. Thus, the results obtained in this work are in agreement

Card 2/3

The effect of stationary ...

Z/055/65/013/001/003/013
E032/E414

with those reported earlier (Czech. J. Phys. 9 (1959), 495). Moreover, it was found that in the uniform positive column the product of the wavelength of the moving striations and the longitudinal component of the electric field is a constant for each type of moving striations (M. Novak: Czech. J. Phys. 8 10 (1960), 954). There are 2 figures.

ASSOCIATION: Katedra elektroniky a vakuové fyziky KU, Praha
(Department of Electronics and Vacuum Physics,
Charles University, Prague)

SUBMITTED: May 28, 1962

Card 3/3

ACCESSION NR: AP4018062

Z/0034/64/000/003/0182/0194

AUTHOR: Sicha, Miroslav (Candidate of technical sciences)

TITLE: Appraisal of the technical importance of flaws detected in thick sheets by supersound

SOURCE: Hutnicke listy, no. 3, 1964, 182-194

TOPIC TAGS: supersonic detection, technical importance of flaw, thick sheet, radial strain, tangential strain, axial strain, normal temperature, high-pressure boiler, transportation, metallographic test

ABSTRACT: There are still no uniform and experimentally verified guidelines for appraising the technical importance of supersonic indications of flaws. The number and size of the admissible indications are, as a rule, agreed upon between the manufacturer of the sheet metal and his customer. The VZKG (= "Research....!") has subjected exports and the most important domestic deliveries of plate for high-pressure boilers to supersonic tests according to the technical delivery conditions of the Society of German Metallurgists dated October 1957, later revised. But the author knows of no publication other than two by Stolar (1961) that appraise

Card 1/3

ACCESSION NR: AP4018062

experimentally the technical importance of supersonic indications as to the reliability of manufactured machinery. The paper describes the method of supersonic testing of thick sheets, the test material, the determination of the size of defects, the appearance, choice and preparation of the samples; analyzes the results of radial, tangential and axial strain at normal temperature and up to 350C, and the effect of thermal tension in widening supersonically detected flaws; and compares these results with the computed strain on the mantle of a high-pressure boiler body under transportation conditions. The strips and samples were metallographically tested to ascertain the cause of the supersonic reflections and the real size of the flaws. These reflections up to an equivalent diameter of 2 mm were found to be due to lines of non-metal insertions of ordinary size and to have practically no effect on the results of strain in any direction, either at normal temperature or at the working heat of high-pressure boilers; but those above 2 mm reduced more or less the values of the radial-strain samples taken from the middle of the tested places. On the other hand, the results of the tangential and axial tests were practically unaffected by surface flaws parallel to the surface of the sheet at either normal temperature or up to 350C, so that more stringent requirements for supersonic purity are justified only if radial strains are pronounced in

Card 2/3

ACCESSION NR: AF4018062

transportation. Original has 9 tables, 4 diagrams, 46 photos (including 16 oscillograms) and 5 equations.

ASSOCIATION: VZKG, Ostrava

SUEMITTED: 00

DATE ACQ: 18Mar64

ENCL: 00

SUB CODE: ML

NO REF SOV: 005

OTHER: 034

Card 3/3

SICHA, Vladimir, Dr.

Possibility of application of Pavlov's physiology in dental
prosthetics. Cesk. stomat. No 4:129-134 Aug 54.
(DENTAL PROSTHESIS
Pavlovian physiol. application)

SICHA, Vladimir

Effect of physical effort on general conditions of rats with radiation sickness and jaw injuries. Sborn. ved. prac. lek. fak. Karlov. univ. (Hrad Kral) 4 no.3:271-279 '61.

1. Stomatologicka klinika; prednosta doc. MUDr. L. Sazana.

(JAWS wds & inj) (RADIATION INJURY exper)
(EXERTION)

SICHA, Vladimir; BERAN, Jiri

Demonstration of copper ions in the dental pulp after the use of so-called cupric cement. Sborn. ved. prac. lek. fak. Karlov. univ. (Hrad Kral) 4 no.3:323-331 '61.

1. Stomatologicka klinika; prednosta doc. MUDr. L. Sazama Katedra soudniho lekarstvi; zast. prednosta MUDr. J. Beran.

(DENTAL MATERIALS) (COPPER metab)
(DENTAL PULP metab)

SICHA, Vladimir

Properties of methylnmethacrylate resins important in stomatological practice. Sborn. ved. prac. lek. fak. Karlov. univ. (Hrad Kral) (Suppl.) 4 no.4:339-373 '61.

1. Stomatologicka klinika; prednosta doc. MUDr. L. Sazama.
(ACRYLIC RESINS)

NOVAK, Lubor

(3)

SURNAME, Given Names

SICHA VLADIMIR

Country: Czechoslovakia

Academic Degrees:

Stomatology Clinic (Stomatologicka klinika) Medical Faculty (Lekarske fakulty)

Affiliation: KU (Charles University, Karlove University) Hradec Kralove; Head /prednosta/
Docent Leon SAZAMA, MD

Source: Prague, Prakticke Zubni Lekarstvi, Vol 9, No 8, Oct 1961; pp 241-248

Data: "Rare Complications in Treating Root Canals"

SICHA, Vladimir MSc, CSc /not identified/
NOVAK, Lubor /graduate dentist: promovani zubni lekar/

878 101643

SURNAME, Given Names

Country: Czechoslovakia

Academic Degrees:

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Affiliation: universita) Head /prednosta/ L. SAZAMA, MD Docent

Source: Prague, Prakticky Zubni Lekarstvi, Vol 9, No 8, Oct 1961; pp249-252

Data: "Jaw Fractures in Agriculture"

JEBAVY, Zdenek MSDr

/SICHA, Vladimir MSDr, CSc /not identified/

GPO 981643

HRADIL, I.

CZECHOSLOVAKIA

Czechoslovakia

Department of Histology and Embryology, Medical Faculty of
Charles University (Katedra histologie s embryologií lekarske
fakulty University Karlovy v Hradci Kralove), Hradec Kralove;
Director: V. VRTIS.

Prague, Ceskoslovenska stomatologie, No 5, Sept 62, pp 314-319.

"A Contribution to the Histochemistry of Dental Pulp."

Co-authors:

POSPISIL, M. Department of Anatomy, Medical Faculty of
Charles University (Katedra anatomie...etc.) Hradec Kralove;
Director: J. HROMADA, MD, DSc.; SICHA, V., Stomatological
Clinic, Medical Faculty of Charles University (Stomatologicka
klinika...etc.), Hradec Kralove; Director: L. SAZAMA, Docent Dr.

(5)

SHIKHA Vladimir
SHIKHA, Vladimir [Sicha, Vladimir]; SAZAMA, Leon

Effect of fatigue on the healing of mandibular fractures
after irradiation. Cesk. otolaryng. 12 no.6:81-83 D'63.

1. Stomatologicheskaya klinika Meditsinskogo fakul'teta
v Gradtse Kralove; rukovoditel': prof. dr. med. L.Sazama,
kand.med.nauk.

*

SI M., V.

Comparison of the effect of fractured mandibles and of another injury in radiation sickness. Cesk. stomat. 65 no.3:198-202
Br'66.

1. Stomatologická klinika lékařské fakulty Karlovy University
v Hradci Králové (přednosta: prof. dr. L. Sazama, CSc.).

SICHA, V.

Is insufficient nourishment in radiation disease the main
cause of malignancy in trauma of the jaws. Cesk. stomat.
65 no.6:453-457 N '65.

1. Stomatologicka klinika lekarske fakulty Karlovy University
v Hradci Kralove (prednosta prof. dr. L. Sazama, CSc.).

SICHA, V.; NOVAK, L.

Foreign bodies in the maxillary sinus as a complication of
dental root canal therapy. Cesk. otolaryng. 12 no.5:293-296
0 '63.

1. Stomatologicka klinika lekarske fakulty KU v Hradci Kralove,
prednosta prof. dr. L. Sazama.
(MAXILLARY SINUS) (FOREIGN BODIES)
(ENDODONTICS) (SINUSITIS)

1ST AND 2ND CROSS										3RD AND 4TH CROSS									
PROCESS AND PROPERTIES INDEX																			
SICHARULIDZE, T. A.										U-4									
BC																			
<p><i>Lens-forming properties of body epithelium in Triton solution. T. A. SICHARULIDZE (Compt. rend. Acad. Sci. U.R.S.S., 1968, 28, 976-977).—Body epithelium in T. solution develops into a normal lens when in contact with a transplacenta which has developed into a regular cup. The eye vesicle itself rarely develops into a regular cup when transplanted under body epithelium. W. F. F.</i></p>																			
ASB-51A METALLURGICAL LITERATURE CLASSIFICATION																			
1ST CROSS										2ND CROSS									
10000 110 000 000										10000 110 000 000									
10000 110 000 000										10000 110 000 000									

SICHARULIDZE, T.A.; POPOV, W.W.

An experiment in the transplantation of embryonic epidermis to replace normal and cataractal eye lenses in adult mammals. Folia biol 8 no.3:181-198 '60. (EEAI 10:6)

1. Chair of Embryology of the Moscow State University. Director: Prof. Dr. V.V.Popov. Institute of Zoology of the Academy of Sciences of the Georgian SSR, Tiflis. Director: Prof. Dr. D.N. Kobachidze.

(EPIDERMIS)

(EYE)

(CATARACT)

(MAMMALS)